

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Nawracala, B.

SERIAL No. Unassigned

EXAMINER: Unassigned

FILED: Herewith

GROUP No.: Unassigned

TITLE: IMPROVED APPARATUS AND METHOD FOR ABSORBANCE  
DETECTION

Attorney Docket No.: 20 00 4378

Commissioner For Patents  
Washington, D.C. 20231

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9-23-01 (Date of Deposit)

Allison Berkman  
Name  
Allison Berkman  
Signature

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the application as follows:

In The Specification

On page 1, at line 3, insert -- Background of the Invention--

-- 1. Field of the Invention --.

On page 1, at line 10, insert -- 2. Discussion of the Background Art --.

On page 2, at line 10, insert -- Summary of The Invention --.

On page 4, at line 3, please insert --Brief Description of the Drawings--.

On page 4, at line 22, please insert --Detailed Description of the Invention--.

In The Abstract

On line 1, after "ABSTRACT" insert --OF THE DISCLOSURE--.

Please amend the Abstract of the Disclosure as follows:

An apparatus and method for absorbance detection in instrumental situations which have short absorption path lengths, such as microchip type devices, includes modulating the sample beam incident upon a sample cell to improve the sensitivity of the absorbance measurement. The modulation means includes a scanning device arranged to move the sample beam from a first position in which the sample beam is incident upon the sample area to a second position in which the sample beam is incident upon the cell.

In The Claims

1. (Amended) Apparatus for measuring absorbance comprising a light source emitting a sample beam which is incident upon a cell having a sample area, said cell being arranged to reflect said sample beam to a detector, wherein said apparatus further comprises modulation means arranged to modulate said sample beam so as to improve the sensitivity of an absorbance measurement.
2. (Amended) Apparatus as claimed in claim 1, wherein said modulation means includes a scanning device arranged to move said sample beam from a first position in which said sample beam is incident upon said sample area to a second position in which said sample beam is incident upon said cell.
3. (Amended) Apparatus as claimed in claim 2, wherein said scanning device is a linear scanning device.
4. (Amended) Apparatus as claimed in claim 3 wherein said linear scanning device is arranged to move said cell.
5. (Amended) Apparatus as claimed in claim 3, wherein said apparatus further comprises an optical element upon which said sample beam is incident and said linear scanning device is arranged to move said optical element.
6. (Amended) Apparatus as claimed in claim 4, wherein said linear scanning device is a motor.

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7. (Amended) Apparatus as claimed in claim 4, wherein said linear scanning device is a piezo-electric device.

8. (Amended) Apparatus as claimed in claim 2, wherein said apparatus further comprises an optical element upon which said sample beam is incident and said scanning device is an angular scanning device arranged to move said optical element.

10. (Amended) Apparatus as claimed in claim 1, wherein said apparatus includes a dual beam configuration.

11. (Amended) Apparatus as claimed in claim 1, wherein said cell comprises a first glass plate bonded to a second glass plate, said first plate having a flow channel formed therein and said second plate having reflection means deposited thereon.

12. (Amended) Method for measuring absorbance comprising:  
transmitting a light beam through a cell having a sample area;  
reflecting said light beam to a detector; and  
modulating said sample beam such that said sample beam is moved from a first position in which said sample beam is incident upon said sample area to a second position in which said sample beam is incident upon said cell, thereby improving the sensitivity of an absorbance measurement.

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Remarks

Claims 1-12 remain in the application.

The specification has been amended to include headings in accordance with US practice.

The Abstract of the Disclosure has been amended to comply with MPEP 608.01(b).

Claims 1-8 and 10-12 have been amended to eliminate reference numbers, the phrase "characterized in," and any lack of antecedent basis. As such, claims 1-8 and 10-12 have been clarified by amendment for purposes of form. It is respectfully submitted that the amendments to claims 1-8 and 10-12 are neither narrowing nor made for substantial reasons related to patentability as defined by the Court of Appeals for the Federal Circuit (CAFC) in Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 95-1066 (Fed. Cir. 2000). Therefore, the amendments to claims 1-8 and 10-12 do not create prosecution history estoppel and, as such, the doctrine of equivalents is available for all of the elements of claims 1-8 and 10-12.

Consideration and allowance of application is respectfully requested.

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

Respectfully submitted,

8-23 01  
Date

  
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Specification

On page 1, at line 3, insert -- Background of the Invention--  
-- 1. Field of the Invention --.

On page 1, at line 10, insert -- 2. Discussion of the Background Art --.

On page 2, at line 10, insert -- Summary of The Invention --.

On page 4, at line 3, please insert --Brief Description of the Drawings--.

On page 4, at line 22, please insert --Detailed Description of the Invention--.

In The Abstract

On line 1, after "ABSTRACT" insert --OF THE DISCLOSURE--.

Please amend the Abstract of the Disclosure as follows:

[The present invention concerns an] An apparatus and method for absorbance detection in instrumental situations which have short absorption path lengths, such as microchip type devices[. By] ~~includes~~ modulating the sample beam incident upon a sample cell[,] ~~to improve~~ the sensitivity of the absorbance measurement [is improved]. The modulation means includes a scanning device arranged to move the sample beam from a first position in which the sample beam is incident upon [said] ~~the~~ sample area to a second position in which the sample beam is incident upon the cell.

[Figure 1.]

In The Claims

1. (Amended) Apparatus for measuring absorbance comprising a light source [(1)] emitting a sample beam [(102)] which is incident upon a cell [(14)] having a sample area [(15)], [the] ~~said~~ cell being arranged to reflect [the] ~~said~~ sample beam to a detector [(8)], [characterised in that] wherein [the] ~~said~~

apparatus further comprises [a] modulation means arranged to modulate [the] said sample beam so as to improve the sensitivity of an absorbance measurement.

2. (Amended) Apparatus as claimed in claim 1, wherein said modulation means includes a scanning device [(13, 115, 130)] arranged to move [the] said sample beam from a first position in which [the] said sample beam is incident upon said sample area to a second position in which [the] said sample beam is incident upon [the] said cell.

3. (Amended) Apparatus as claimed in claim 2, wherein said scanning device is a linear scanning device [(13, 130)].

4. (Amended) Apparatus as claimed in claim 3 wherein said linear scanning device [(130)] is arranged to move [the] said cell.

5. (Amended) Apparatus as claimed in claim 3, wherein said apparatus further comprises an optical element [(11)] upon which said sample beam is incident and said linear scanning device [(13)] is arranged to move [the] said optical element.

6. (Amended) Apparatus as claimed in claim[s] 4 [or 5], wherein said linear scanning device is a motor.

7. (Amended) Apparatus as claimed in claim[s] 4 [or 5], wherein said linear scanning device is a piezo-electric device.

8. (Amended) Apparatus as claimed in claim 2, wherein said apparatus further comprises an optical element [(116)] upon which said sample beam is incident and said scanning device [(115)] is an angular scanning device arranged to move [the] said optical element.

10. (Amended) Apparatus as claimed in [any preceding] claim 1, wherein said apparatus includes a dual beam [to co-]configuration [(104)].

11. (Amended) Apparatus as claimed in [any preceding] claim 1, wherein said cell [(14) having a sample area (15)] comprises a first glass plate [(601)] bonded

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to a second glass plate [(602)], said first plate having a flow channel [(603)] formed therein and said second plate having reflection means [(604)] deposited thereon.

12. (Amended) Method for measuring absorbance comprising: [the steps of]

transmitting a light beam [(102)] through a cell [(14)] having a sample area [(15),];

reflecting said light beam to a detector [(8), characterised by the further steps of]; and

modulating [the] said sample beam such that said sample beam is moved from a first position in which [the] said sample beam is incident upon [the] said sample area to a second position in which [the] said sample beam is incident upon [the] said cell, thereby improving the sensitivity of [the] an absorbance measurement.